

What is claimed is:

1. A coupler for a cable trough system, the coupler comprising:
 - a body having a body terminal end defining an overlap region, the overlap region being sized to slideably receive a terminal end of a trough member along a longitudinal direction of the trough member;
 - a spring positioned to selectively engage the terminal end of the trough member;
 - and
 - a slide carried on the body for moving the spring between a locking position and a release position, the slide moveable in the longitudinal direction.
2. The coupler of claim 1, wherein the body terminal end is a first body terminal end, the spring is a first spring, and the slide is a first slide, and wherein the body includes a second body terminal end defining a second overlap region, and wherein the coupler further includes:
 - a second spring positioned to selectively engage a terminal end of a second trough member, wherein the second spring is positioned on the second body terminal end opposing the first spring positioned on the first terminal end; and
 - a second slide carried on the body for moving the second spring between a locking position and a release position, the second slide moveable in the longitudinal direction and wherein the second slide is moveable independently from the first slide.
3. The coupler of claim 1, wherein the overlap region defines a U-shaped spacing for receiving the terminal end of a U-shaped trough.
4. The coupler of claim 1, further comprising a plurality of springs and a plurality of slides, one slide for each spring.
5. The coupler of claim 1, wherein the spring includes an angled projection for engaging the terminal end of the trough member, the angled projection disposed at an angle to the longitudinal direction.

6. A coupler for a cable trough system including a trough member having a terminal end, the coupler comprising:

a body having an open end and including first and second guiding surfaces defining a spacing, the spacing being sized to receive the terminal end, with the first guiding surface slideably engageable with an internal wall surface of the terminal end and with the second guiding surface slideably engageable with an external wall surface of the terminal end;

a spring carried on the body and directed to push the terminal end against the body upon insertion of the terminal end into the spacing; and

a locking element carried on the body, wherein the locking element is slidably coupled to the body to slide between a first sliding position wherein the spring engages the terminal end within the spacing and a second sliding position wherein the spring is released to allow the terminal end to be removed from the spacing defined by the body, the locking element being slideable in a direction parallel to the first and second guiding surfaces.

7. The coupler of claim 6, wherein the spring is disposed within the spacing between the first guiding surface and the second guiding surface.

8. The coupler of claim 6, wherein the locking element is slidably coupled to the second guiding surface adjacent to the spring.

9. The coupler of claim 6, wherein the spacing is a first spacing, and wherein the body defines a second spacing at an opposite end of the body, the second spacing sized for a terminal end of a second trough member, wherein the spring engages the terminal end of the second trough member when the locking element is in the first sliding position, and wherein the first locking element further includes a third sliding position in which the terminal end of the second trough member is released from the coupler.

10. The coupler of claim 6, wherein the spring comprises:

a longitudinal portion having first and second ends, wherein the longitudinal portion is positioned generally parallel to the second guiding surface; and

a first arm coupled to the longitudinal portion at the first end, wherein the first arm has an engaging end and is positioned at an angle relative to the longitudinal portion, wherein the angle projects the engaging end of the first arm towards the first guiding surface and away from the open end.

11. A coupler for a cable trough system including trough members having a terminal end with first and second side walls joined at lower edges by a bottom wall and where the side walls and the bottom wall have a wall thickness separating internal and external wall surfaces, the coupler comprising:

a body including first and second guiding surfaces defining a spacing, the spacing being sized to receive the wall thickness inserted into the spacing in a longitudinal direction and having an unobstructed open end for admitting the terminal end into the spacing with the first guiding surface slideably engageable with the internal wall surface of the terminal end and with the second guiding surface slideably engageable with the external wall surface of the terminal end, the first guiding surface having a generally U-shaped configuration including first and second side wall portions joined at lower edges by a bottom wall portion, and the second guiding surface at least partially surrounding the first and second side wall portions and the bottom wall portion of the first guiding surface;

a plurality of springs positioned to urge the terminal end against the body upon insertion of the terminal end into the spacing; and

a plurality of moveable locking elements carried on the body, wherein each locking element of the plurality of locking elements is slidably coupled to the body to slide in the longitudinal direction between a first sliding position wherein a respective spring of the plurality of springs engages the terminal end within the spacing and a second sliding position wherein the respective spring is released to allow the terminal end to be removed from the spacing of the coupler.

12. The coupler of claim 11, wherein a first spring is disposed along the first side wall portion of the first guiding surface and a second spring of the plurality of springs is disposed along the second side wall portion of the first guiding surface.

13. The coupler of claim 12, wherein a first locking element and a second locking element of the plurality of locking elements are slidingly coupled to the body adjacent to the first and second springs.

14. The coupler of claim 13, wherein a third spring of the plurality of springs is disposed along the bottom wall portion of the first guiding surface, and wherein a third locking element of the plurality of locking elements is slidingly coupled to the body adjacent to the third spring.

15. The coupler of claim 11, wherein the spacing is a first spacing, and wherein the body defines a second spacing at an opposite end of the body, the second spacing sized for a terminal end of a second trough member, wherein each spring engages the terminal end of the second trough member when each respective locking element is in the first sliding position, wherein each respective locking element further includes a third sliding position in which the terminal end of the second trough member is released from the coupler.

16. The coupler of claim 11, wherein the spacing is a first spacing, and wherein the body defines a second spacing at an opposite end of the body, the second spacing sized for a terminal end of a second trough member, wherein a first half of the plurality of springs and associated locking elements are positioned on the body to push the terminal end of the trough member and a second half of the plurality of springs and associated locking elements are positioned on the body to push the terminal end of the second trough member inserted into the second spacing, and wherein the first half of the

springs and associated locking elements are moveable independently of the second half of the springs and the associated locking elements.

17. The coupler of claim 11, wherein each of the plurality of springs comprises:
a longitudinal portion having first and second ends, wherein the longitudinal portion is positioned generally parallel to the second guiding surface; and
a first arm coupled to the longitudinal portion at the first end, wherein the first arm has an engaging end that is positioned at an angle relative to the longitudinal portion, wherein the angle projects the engaging end of the first arm towards the first guiding surface.
18. The coupler of claim 17, wherein each of the plurality of springs further includes a second arm coupled to the longitudinal portion at the second end, the second arm including an engaging end projected at the first guiding surface.
19. The coupler of claim 17, wherein the first arm pushes the internal wall surface of the first side wall of the terminal end against the first side wall portion of the first guiding surface.
20. The coupler of claim 17, wherein the engaging end of the first arm includes at least one projection positioned to engage the terminal end of the trough member.
21. The coupler of claim 11, wherein the second guiding surface defines a first aperture, wherein a first locking element covers the first aperture when in the first sliding position and wherein the aperture is unobstructed when the first locking element is in the second sliding position so that at least part of the longitudinal portion and the first arm penetrate the aperture when the first locking element is in the second sliding position.

22. The coupler of claim 11, wherein the second guiding surface further comprises a railway on which each locking element is slidably coupled.

23. The coupler of claim 11, wherein each locking element comprises:
a locking body extending longitudinally with first and second ends; and
a handle portion coupled to the locking body.

24. The coupler of claim 23, wherein the handle portion of the locking element is coupled to the locking body at a midpoint between the first and second ends of the locking body.

25. A method for using a coupler and a first trough member, the method comprising the steps of:

providing a terminal end of the first trough member coupled to the coupler,
wherein the terminal end was inserted in a longitudinal direction into a spacing defined by the coupler;

sliding a locking element on the coupler parallel to the longitudinal direction to release a spring from a locking position; and

removing the terminal end of the first trough member from the spacing so that the terminal end slides past the spring.

26. The method of claim 25, further comprising the steps of:

providing a terminal end of a second trough member in a further spacing defined by the coupler on a second side of the coupler;

sliding the locking element in an opposite direction to release the spring from the locked position relative to the second trough member; and

removing the terminal end of the second trough member from the further spacing.

27. A coupler for a cable trough system including first and second trough members having terminal ends, the coupler comprising:

a body having open ends and including first and second guiding surfaces defining a first spacing in a first half of the body and a second spacing in a second half of the body, the terminal end of the first trough member being inserted into the first spacing in a longitudinal direction and the terminal end of the second trough member being inserted into the second spacing in the longitudinal direction; and

a releasable spring mechanism disposed on the body adjacent the first guiding surface, wherein the releasable spring mechanism includes a first portion that engages the terminal end of the first trough member and a second portion that engages the terminal end of the second trough member, and wherein the first portion of the releasable spring mechanism is released independently of the second portion to release the terminal end of the first trough member while maintaining engagement of the second portion with the terminal end of the second trough member.

28. The coupler of claim 27, wherein the releasable spring mechanism includes at least one locking element moveable to push and release the releasable spring mechanism.

29. The coupler of claim 28, wherein the at least one locking element is moveable in a direction perpendicular to the longitudinal direction.

30. The coupler of claim 28, wherein the at least one locking element is a screw.

31. The coupler of claim 28, wherein the at least one locking element is a slide.

32. The coupler of claim 28, wherein the releasable spring mechanism includes a first spring positioned on the first half of the body to push the terminal end of the first trough member and a second spring positioned on the second half of the body to push

the terminal end of the second trough member, the first and second springs each being releasable independent of the other.

33. A coupler for a cable trough system, the coupler comprising:

a body having a body terminal end defining an overlap region, the overlap region being sized to slideably receive a terminal end of a trough member along a longitudinal direction of the trough member between a first and a second guiding surface of the body;

a spring positioned to selectively force the terminal end of the trough member, the spring including a longitudinal portion coupled at an end to an arm portion, wherein the longitudinal portion extends from the end in the longitudinal direction towards the body terminal end, and wherein the arm portion extends at an angle in relation to the longitudinal portion towards the first guiding surface and away from the body terminal end; and

a locking element carried on the body for positioning the spring, the locking element being coupled to the spring and the body at a point between the arm portion of the spring and the body terminal end, and wherein the locking element is moveable perpendicular to the longitudinal direction between a locking position and a release position.

34. The coupler of claim 33, wherein the overlap region defines a U-shaped spacing for receiving the terminal end of a U-shaped trough.

35. The coupler of claim 33, further comprising a plurality of springs and a plurality of locking elements, one locking element for each spring.

36. The coupler of claim 35, wherein the body includes a midpoint dividing first and second halves of the body, and wherein the plurality of springs and locking elements are spaced so that a first half of the plurality of springs and locking elements are positioned

adjacent the midpoint on the first half of the body and a second half are positioned adjacent the midpoint on the second half of the body.

37. The coupler of claim 36, wherein the first half of the plurality of springs are releasable independently of the second half of the plurality of springs.

38. The coupler of claim 33, wherein the locking element is a screw.

39. A coupler for a cable trough system including first and second trough members having terminal ends, the coupler comprising:

- a body having open ends and including first and second guiding surfaces defining a first spacing in a first half of the body and a second spacing in a second half of the body, the terminal end of the first trough member being inserted into the first spacing in a longitudinal direction and the terminal end of the second trough member being inserted into the second spacing in the longitudinal direction;

- a first spring portion coupled to the body;

- a second spring portion coupled to the body; and

- means for selectively releasing the first or second spring portion from engagement with the first or second trough member while maintaining engagement of the other with the first or second trough member.

40. A coupler for a cable trough system including first and second trough members having terminal ends, the coupler comprising:

- a body having open ends and including first and second guiding surfaces defining a first spacing in a first half of the body and a second spacing in a second half of the body, the terminal end of the first trough member being inserted into the first spacing in a longitudinal direction and the terminal end of the second trough member being inserted into the second spacing in the longitudinal direction;

- a first spring portion coupled to the body;

- a second spring portion coupled to the body;

a first locking element coupled adjacent to the first spring portion; and
a second locking element coupled adjacent to the second spring portion;
wherein the first locking element pushes the first spring portion against the first trough member and the second locking element pushes the second spring portion against the second trough member, and wherein the first spring portion and associated first locking element are released to release the first trough member while maintaining engagement of the second spring portion and the associated second locking element with the second trough member.

41. A method for use of a coupler and a trough system including first and second trough members, the method comprising the steps of:

providing a terminal end of the first trough member coupled to the coupler and a terminal end of the second trough member coupled to the coupler, wherein the terminal ends were inserted in a longitudinal direction into first and second spacings defined by the coupler, wherein the first trough member is held to the coupler with a first spring portion, and wherein the second trough member is held to the coupler with a second spring portion;

releasing the first spring portion to release the terminal end of the first trough member without releasing the terminal end of the second trough member; and

removing the terminal end of the first trough member from the first spacing.

42. A method for use of a coupler and a trough system including first and second trough members, the method comprising the steps of:

providing a terminal end of the first trough member coupled to the coupler and a terminal end of the second trough member coupled to the coupler, wherein the terminal ends were inserted in a longitudinal direction into first and second spacings defined by the coupler;

releasing a plurality of first locking elements on the coupler in a direction perpendicular to the longitudinal direction to release a plurality of first springs from a

locking position to release the terminal end of the first trough member without releasing the terminal end of the second trough member; and

removing the terminal end of the first trough member from the first spacing so that the terminal end of the first trough member slides past the first plurality of springs.

43. The method of claim 42, further comprising the steps of:

releasing a plurality of second locking elements on the coupler in a direction perpendicular to the longitudinal direction to release a plurality of second springs from a locking position to release the terminal end of the second trough member; and

removing the terminal end of the second trough member from the second spacing so that the terminal end slides past the second plurality of springs.